B&K

WE SIMPLY SOUND BETTER.

ST3140

Three Channel Amplifier

OWNER'S MANUAL

B & K Components Ltd.

13000 rev 0005

B&K Components, Ltd., 2100 Old Union Road, Buffalo, New York 14227

13000 rev 0005

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Accessories included: Manual and Power cord

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

SAFETY PRECAUTIONS

PLEASE READ BEFORE INSTALLING

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

The lightning flash with arrowhead, within an equilateral triangle, is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure that may be sufficient magnitude to constitute a risk of electric shock to you.

The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the unit.

- Observance of polarity is essential. Double-check connections before turning the amplifier on. The amplifier can be damaged if polarities are incorrect.
- Damage can occur to your speakers if the power rating* of each individual driver is exceeded by the amplifier. Ensure that all the drivers in your speaker system are capable of handling not only the power being delivered by the amplifier, but the energy that is likely to be generated during strong passages.
- Turn amplifier 'off' when plugging in or unplugging input and speaker cables!!!
- The ST3140 is equipped with raised feet so that continuous ventilation can be maintained. They help to maintain acoustic feedback into the amplifier at a minimum. They also provide a measure of protection against scratching any surface the unit might be resting on. **Do not alter or remove them**.
- Do not stack anything on top of the amplifier (preamplifier, processor, source...etc.).
- Leave at least 2-3 inches clearance from the top of the amplifier to the next shelf, component, etc., to ensure proper ventilation.

* If you are at all unsure of what the speaker 'ratings' are, contact your dealer.

The ST3140's purpose and function

The ST3140 is a compact, very efficient, three channel power amplifier. It is designed to be used in all types of audio or audio/video systems.

Design and construction

The ST3140 utilizes high quality electronic circuitry to achieve an environment wherein a detailed, transparent, and highly musical sound can be realized. The high quality parts complement include state-of-the-art solid state devices, 1% metal film resistors, computer grade electrolytic power supply capacitors, and a high capacity toroidal transformer.

The ST3140 operates class A predriver and AB high current MOSFET power output stages. It is capable of reproducing the most demanding audio signals at rated power levels.

Features

Toroidal Transformers - Efficient high current transformer for improved dynamics.

Discrete Circuitry - More accurate and three dimensional reproduction of source material.

Class A Predriver - Improves low level detail for smoother, more musical sound.

AB MOSFET Output Stage - For efficient and linear power delivery.

Limited Protection - Provides short term protection from accidental shorting of output devices and protection from thermal overload.

Gold Plated Connectors - Improve connections for better sound and minimized signal loss and degradation.

1% Metal Film Resistors - Low noise resistors for better sound and a greater degree of repeatability.

High Current - Ability to reproduce demanding recordings.

Computer Grade Capacitors - Large capacity computer grade electrolytic capacitors for extended low frequency control and improved dynamics.

Rear Panel View

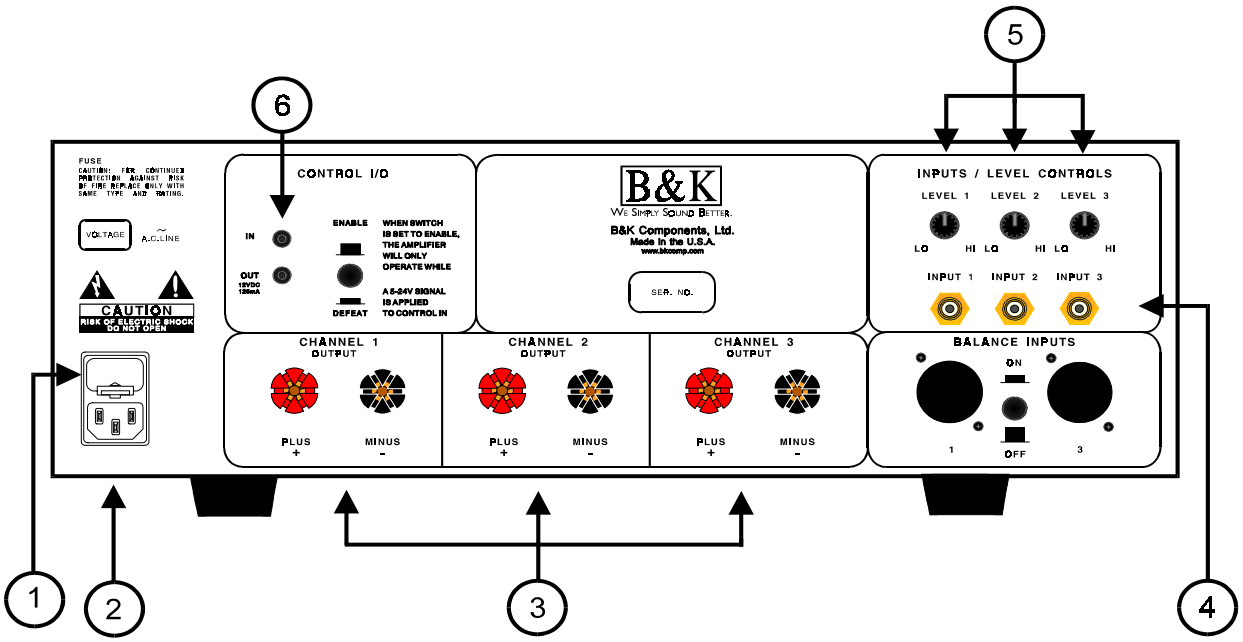


Figure A

1. AC fuse holder
2. AC Input receptacle
3. Speaker outputs
4. Inputs
5. Level controls
6. Amplifier control muting input/output

NOTE: THE BALANCED INPUTS ARE NOT AVAILABLE ON THE ST3140 AMPLIFIER

Rear panel description

1. AC fuse holder - Holds the AC Line fuse. This fuse is an 8 Amp / 250 Volt Slow Blow fuse. Replace with same type and value fuse only.

2. AC Input receptacle - For attaching the supplied AC power cord to the amplifier.

3. Speaker outputs - For connecting the speakers to the amplifier. Explained further on page 7.

4. Inputs - For connecting signal patch cables (interconnects) from the preamplifier to the amplifier to pass signal. Explained further on page 7.

5. Level controls - For adjusting the input level of each channel into the amplifier. There are level controls on the back of the amplifier. One level control for each channel. Explained further on page 6.

6. Amplifier control muting input/output -
To provide remote switching of mute on/off of the amplifier. Explained further below.

Control muting

A control is provided on each ST3140 amplifier to allow remote switching of mute on/off. The preamplifier's control output, such as is provided with B&K series preamplifiers, can be utilized to provide a control signal to the ST3140. If more than one amplifier is being controlled, the control signal can be extended to include each successive unit by simply running a 3.5mm mini-jack cable from the CTRL OUT connector of the first amplifier to the CTRL IN connector of the next unit (commonly referred to as 'daisy chaining'). An example of how to connect two amplifiers is illustrated in figure B.

If a source other than a B&K series preamplifier is used to control multiple amplifiers, only the control output voltage from the source is critical. It must be within the range, as indicated on the rear panel, 5-24 volts DC is required. The amplifier will provide each successive amplifier with a control voltage of 12 volts DC for reliable operation. The amplifiers control output may be used as a source of 12 VDC @ 125 mA for other user applications as well. DO NOT POWER MOTORS WITH THIS CIRCUIT.

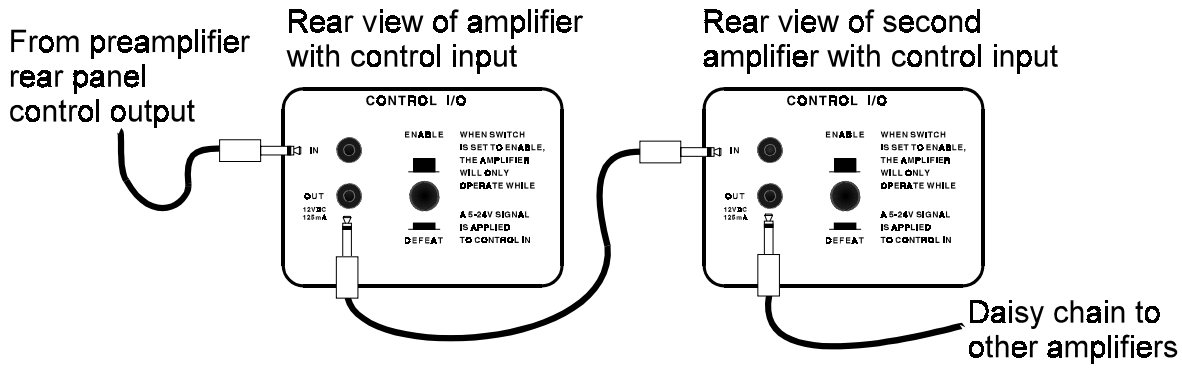

From preamplifier rear panel control output
Rear view of amplifier with control input
Rear view of second amplifier with control input
CONTROL I/O
IN
OUT
12VDC 125mA
ENABLE
DEFEAT
WHEN SWITCH IS SET TO ENABLE, THE AMPLIFIER WILL ONLY OPERATE WHILE A 5-24V SIGNAL IS APPLIED TO CONTROL IN
Daisy chain to other amplifiers

Figure B

If the control function is desired, each unit in the system must remain connected at all times and the control must be enabled. To enable the control function, the CTRL ENABLE button must be out for each controllable amplifier in the system. For more information on the amplifiers output status under various control conditions, refer to the table below.

@ CTRL IN	Button position	Output status	@ CTRL OUT
Signal	OUT	Sound	Signal
Signal	IN	Sound	Signal
No Signal	OUT	Mute	No Signal
No Signal	IN	Sound	Signal

**Note: The control voltage is for muting control only. Each amplifier must be connected to its own source of AC power in order for it to operate.*

Level controls

The level controls are an option that can be added to the amplifier. If your amplifier has this option, the balanced inputs are not present. **You can not have level controls and balanced inputs on an amplifier.**

There are three level controls on the back of the amplifier. One level control for each channel.

When using the level controls, first start with them turned all the way up (clockwise). Then adjust them according to your system requirements to match the sound level coming from each speaker.

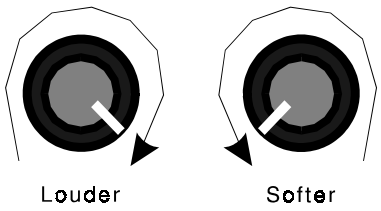
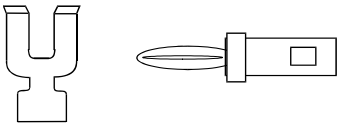


Figure C

Outputs

Five way binding posts are provided. One pair for each channel. They are designed to accept a banana-type plug or spade lug connector (shown below) and are color coded for easy identification. The red (+) post should always be connected to the speakers (+) jack. The black (-) post should always be connected to the speakers (-) jack.



Spade connector Banana jack

Here is a typical amplifier setup:

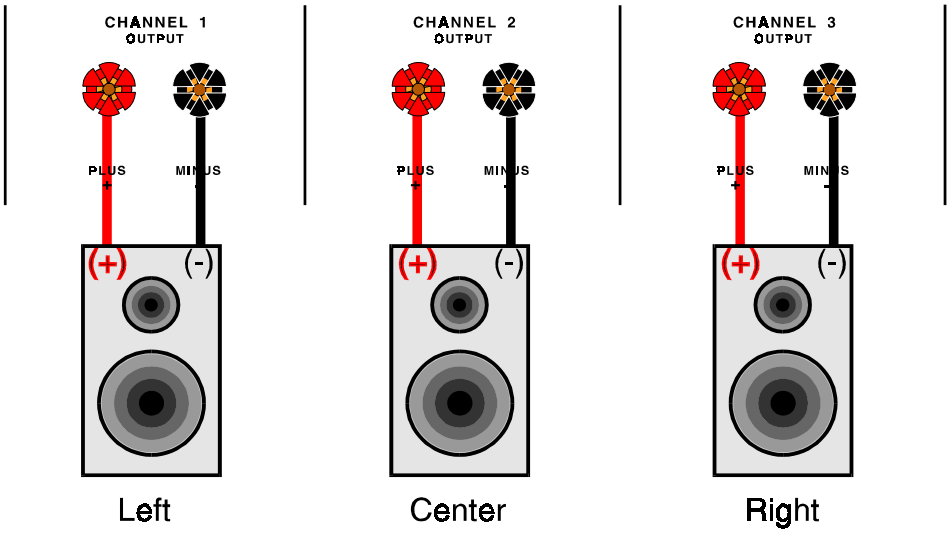
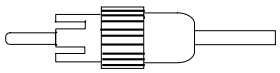


Figure D

Inputs

Unbalanced - RCA type connectors accept line input from the preamplifier's unbalanced output connectors. There are three input connectors, one for each channel, that may be used to connect the amplifier to the preamplifier.

RCA cable connector - 

Here is a typical input setup:

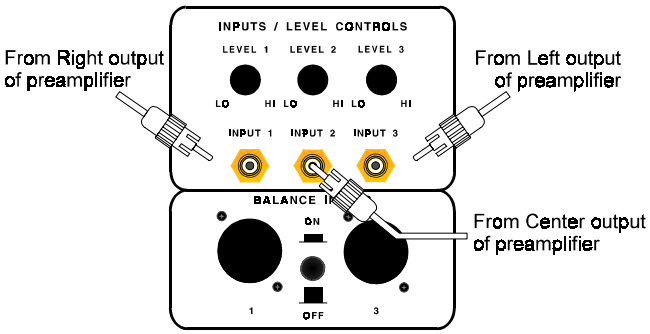


Figure E

System installation

There will most likely be a number of cables involved in the installation of your home entertainment system. Pre-planning is essential in order to maximize system efficiency. We recommend the following as a means of helping you reach that goal:

- Make a diagram of your proposed system by laying out the relative location of each component in the system. Then lay out the proposed cable runs between them. Number each cable and record its length on the diagram for future reference.

- Cable runs are critical in that they must be kept away from sources of power radiation (amplifiers, power cords, heaters, etc...). For the sake of safety, they should also be kept out of traffic areas.

- The process of optimizing the system will include the type of cable, the length of the run, and the obstructions it must deal with along its run. Your dealer can advise you on the products available and their relative merits. If building custom length audio cables is not your strength, your dealer should be able to help you with that as well.

- When possible, use a separate AC power line for the amplifier, one that is not shared by any other component in the system of any other house hold component.

Tip: Take a piece of stout string (longer than the longest cable run) and mark it at each foot of length. Then do a mock cable run using the string, dressing it neatly along the way. Count the divisions to the next full foot, and add one foot to allow for some movement of the components. This will provide you with the ideal cable length.

Making the connection

- Before doing anything, ensure that the power switch on the amplifier's front panel is in the 'off' position. Again, it is recommended that you locate a separate AC power outlet for the amplifier, one that is **not** shared by any other audio component in the system or any other house hold component. This will eliminate the possibility of the amplifier 'modulating' the power being supplied to the component and compromising the signal originating from that component.

- Locate the AC power cord provided with the amplifier and plug it into the power input receptacle in the rear panel. **Do not connect it to the AC power source yet!**

- Connect the audio cables from your preamplifier's output to the corresponding input connector on the amplifier.

- Connect the wires from your speakers to the appropriate output on the amplifier. It is absolutely essential that you observe correct polarity in these connections.

  Example: If you connect your right front output of your preamplifier to channel 1 input on the amplifier, remember to connect your right front speaker wires to channel 1's outputs. Always observe polarity when connecting speakers, connect amplifiers (+) to the speakers (+) and amplifiers (-) to speakers (-).

- Double check all connections.

- Plug the amplifier's power cord into the AC power source. Turn the amplifier's power switch 'on'. The panel light should be illuminated. Leave the preamplifier turned off. Before proceeding to the next step turn the amplifier off and wait 30 seconds for the amplifier to discharge. Both the preamplifier and amplifier should be off.

- Connect a playback unit (CD, VLD, Tuner, etc...) to the preamplifier. Turn the volume on the preamplifier to minimum. Turn on the preamplifier, then the amplifier (in that order). Set source on the preamplifier to the playback unit you've just connected. Turn volume up slowly and music should be heard from all channels. If this is not the case, double check your installation.

- Should you encounter any problems that cannot be traced to the source or the material being played, consult the "TROUBLESHOOTING" section on page 10.

*Note: When turning equipment 'off', the amplifier should always be turned off **first**, then the preamplifier. When turning equipment 'on', the preamplifier should always be turned on **first**, then the amplifier. Before turning anything on, ensure the preamplifier is at a low volume level.*

Troubleshooting

PROBLEM	POSSIBLE CAUSE	POSSIBLE SOLUTION
No sound ('on' LED not illuminated)	1. Power cord not plugged in. 2. Power off at AC source. 3. AC power inlet fuse blown or faulty. 4. Control switch in the wrong position.	1. Reconnect power cord. 2. Check AC switch or fuse. 3. Check for shorts or overloading. 4. Place control switch in proper position. (Page 5)
No sound on some or all selected channels ('on' LED illuminated)	1. Speaker leads loose or faulty. 2. Line stage to amp. cables loose. or faulty. 3. Source to line stage cables loose or faulty. 4. Line stage or source not correctly selected.	1. Tighten, repair, or replace cable. 2. Tighten, repair or replace cable. 3. Tighten, repair or replace cable. 4. Check all switch settings.
Sound lacks direction, bass weak	1. Speakers connected out of phase.	1. Check connections making sure that cables are connected (+) to (+) and (-) to (-).
Loud hum or buzz on one or more channels	1. Poor ground connection in interconnect cables.	1. Check all connectors and repair as necessary.
Channel sounds distorted and low in output	1. Blown rail fuse.	1. Replace blown rail fuse inside amplifier.

***** Note***: If unit continues to blow power inlet fuses, **DO NOT USE A HEAVIER FUSE!!**, have it serviced.

Care and cleaning

Under normal use, the amplifier will not require any special care. Over time you may wish to clean the exterior of the unit by wiping it with a damp cloth to remove any dirt or dust that accumulates on it. Do not let any liquid enter the amplifier thru the vents in the top cover. You may clean the connectors on the rear panel with isopropyl alcohol annually.

ST3140 SPECIFICATIONS

Power rating:	8 ohms	140 watts @ 1 kHz
	4 ohms	185 watts @ 1 kHz
Frequency response		5 Hz - 45 kHz
Input sensitivity		1.0 Volts
THD (S+N)		0.09 % @ 1 kHz
Input impedance		33.2 k ohms
Damping factor		100
Current (peak to peak)		30 Amps
Slew rate		14 V / μsec
Dynamic headroom		1.0 dB
S/N (A-weighted)		95 dB
Voltage gain		28
Line voltage		120/220/240 VAC switchable
Dimensions (O.A.)		17"(w) X 15.5"(d) X 5.75"(h)
Weight		37 lbs
Power consumption		680 watts max 7.5 Amps max current draw 60 watts @ no input
Replacement fuses		Line - 8 Amp/250 Volt Slow Blow Rails - 4 Amp/250 Volt Slow Blow

Limited Warranty

B&K Components Ltd., referred to herein as B&K, warrants your B&K equipment against all defects in material and workmanship for a period of five years from the date of purchase. This warranty applies only to the original purchaser and only to equipment in normal residential use and service. Defective equipment must be returned to B&K, prepaid, accompanied by sufficient payment to cover the cost of return shipping and handling, and will be repaired or replaced at the discretion of B&K whose decision as to the method of reparation will be final.

This warranty shall not apply to any equipment which is found to have been improperly installed, incorrectly fused, misused, abused, or subjected to harmful elements, used in any way not in accordance with instructions supplied with the unit, or to have been modified, repaired or altered in any way without the expressed, written consent of B&K. This warranty does not apply to the cabinet, the remote controller, or appearance items such as the faceplate, control buttons, or display lenses, nor does it cover any expenses incurred in shipping the unit to and from the manufacturer's service depot.

No warranty, implied or otherwise created by State law shall extend beyond the terms of this warranty and B&K shall not be liable for any incidental or consequential damage arising out of a defect in material or workmanship of the unit during the terms of this warranty or thereafter. Some States do not allow the exclusion or limitation of incidental or consequential damages and the foregoing exclusions may not apply to you.

This warranty gives you specific legal rights. Your may also have other rights which vary from State to State.

No agent, representative, dealer or employee of B&K has the authority to increase or alter the obligations or terms of this warranty.

B&K Components Ltd.

RETURNING EQUIPMENT

No equipment may be returned to B&K Components Ltd. Without a RETURN AUTHORIZATION. Should you find it necessary to return equipment to B&K, for any reason, a RETURN AUTHORIZATION (RA) number must be issued by B&K in respect of the equipment being returned. You may request an RA number by calling B&K at the numbers below. We ask that you provide the following information at that time.

1. Your name, address, and phone number.
2. The model and serial number of the equipment being returned.
3. A description of the problem being experienced.

Your call will be referred to a Technical Service Representative who will work with you to resolve the problem. If it is determined that the unit must be returned for repair, an RA number will be issued.

B&K Components Ltd. 2100 Old Union Road, Buffalo New York 14227
1-800-543-5252 or 1-716-656-0023

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B&K Components, Ltd.
2100 Old Union Road
Buffalo, New York 14227
716-656-0023
www.bkcomp.com

LIST YOUR UNIT INFORMATION HERE

MODEL # ST3140

SERIAL # _____

DEALER NAME _____

_____

DEALER PHONE # _____

SALES PERSON _____

DATE PURCHASED _____

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